

EXPLANATION FOR PRELIMINARY GEOLOGIC MAP OF THE GOULD QUADRANGLE

NORTH PARK, JACKSON COUNTY, COLORADO

By Douglas M. Kinney

SCALE 1:48,000

70-1831

This illustration is preliminary
and has not been edited or reviewed
for conformity with U. S. Geological
Survey standards or nomenclature.

Holocene

Qa

Alluvium

Flood-plain deposit along present streams

Qlc

Qp

Landslide and colluvium deposits

Landslide deposits probably contemporaneous with pluvial conditions of glaciations 2 and 3

Piedmont gravels

Thin gravel deposit on erosion-cut surfaces

Qm2

Qt3

Qt2

Deposits of glaciation 2

Gould glaciation of Eschman, 1955.
Includes terminal and lateral moraines

Younger terrace deposits

Qt3, 10-20 ft above present stream level.
Outwash gravel of glaciation 3, H-H
surface of Eschman, 1955

Qm1

Qt1

Qt2

Qt3

Deposits of glaciation 1

Owl Mountain till of Eschman, 1955.
Poorly sorted unconsolidated sand and
gravel that contain boulders of granitic
Precambrian rocks 6 to 8 ft in diameter

Older terrace deposits

Numbered in order of age. Qt3 is the oldest

Qt1, 80-100 ft above present stream level.
Higher surface of Eschman, 1955. May be
outwash from pre-Wisconsin glaciation

Qt2, 120 ft above present stream level

Qt3, 180 ft above present stream level

UNCONFORMITY

Tv

Tp

Tva

Tpa

Extrusive igneous rocks

Volcanics on Owl Mountain and Bull Mountain

North Park Formation

Gray calcareous nodular ashy siltstone, volcanic conglomerate, volcanic ash, pink siltstone, and fine sandstone.

Tpa, pink to gray consolidated ash-flow tuff

Tva, consolidated pink to gray ash-flow tuff
unit with crystals of sanidine and quartz. Discontinuously present at base

UNCONFORMITY

Twp

White River Formation

Gray calcareous ashy claystone, siltstone, and sandstone. Includes few poorly preserved titanomagnetite vertebrate bones on southwest side of Owl Ridge

Ic

Coalmont Formation

Undivided upper and middle members: fine-grained micaceous sandstone, tuffaceous siltstone, sandstone, conglomerate, and carbonaceous claystone or mudstone. Conglomeratic beds are prominent south of Spring Creek fault and northwest of Vile Ranch

Tri

Middle Park Formation

Fine-to coarse-grained, tan-weathering arkosic sandstone and grit intercalated with micaceous mudstone; porphyritic volcanic rock-pebble conglomerate on Johnny Moor Mountain. Includes thick discontinuous Sudduth coal bed at base, Capron coal zone 2,400 ft above the base, and an unnamed bed 3,500 ft above base. Thickness of Middle Park Formation as mapped on southwest side of McCullum anticline is about 5,500 ft. Lower 3,500 ft is zone 1 (Paleocene) on the basis of pollen and spore determinations by E. B. Leopold, U. S. Geological Survey

UNCONFORMITY

Kps

Kpsh

Pierre Shale

Kpss, sandy member: interbedded brown to gray calcareous sandstone, siltstone, and shale; minor clay-pebble conglomerate. About 5,000 ft thick west of Canadian River in Johnny Moor Mountain quadrangle

Kpsh, shaly member: gray shale, silty to sandy in upper part, noncalcareous except near base

Kn

Niobrara Shale

Mostly dark-gray calcareous shale; weathers light gray to tan

Kh

Carter Shale

Dark-gray, non-calcareous shale, tan siltstone with thin bentonite beds near base; overlain by light-gray shale. Coal-bearing member at top

Kd

Lakota Sandstone

Trilobite with coarse conglomeratic sandstone at base, soft-gray and carbonaceous shale and non-marine clay beds in middle and gray fossiliferous sandstone at top. Basal sandstone forms hogback and upper sandstone makes dip slope

Jn

Harrison Formation

Varicolored shale and marl interbedded with fine-grained gray limestone and soft white sandstone

Js

Sundance Formation

Light-gray, medium-to coarse-grained, massive to cross bedded sandstone

UNCONFORMITY

Tc

Al

Chugwater Formation

Red and gray fine-grained sandstone and siltstone with 15-25 ft bed of fine-grained light-gray non-marine limestone (Al) near base

PGe

Granite and gneiss

Contact

Short dashed where inferred, dotted where concealed

Strike and dip of beds

Fault

Dashed where approximately located. Bar end ball on downthrown side

Strike and dip of overturned beds

Syncline

Anticline

Strike of vertical beds

Shaft

Adit

40

Coal mine or prospect, abandoned

Drill hole for oil, abandoned

Oil well

Gas well

Oil well, abandoned

Drill hole, show of gas

REFERENCES

Eschman, D. F., 1955, Glaciation of the Michigan River Basin, North Park, Colo.: The Journal of Geology, v. 63, p. 197-213

SYMBOLS

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TERTIARY

Oligocene and Miocene

Paleocene and Eocene

Upper Cretaceous

Lower Cretaceous

Upper Jurassic

Lower Jurassic

Upper Triassic

Lower Triassic

PRECAMBRIAN

JURASSIC

TRIASSIC

CRETACEOUS

OLIGOCENE

MIOCENE

PACIFIC